

EXHIBIT 1

OMEGA Scientific Program Advisory Committee

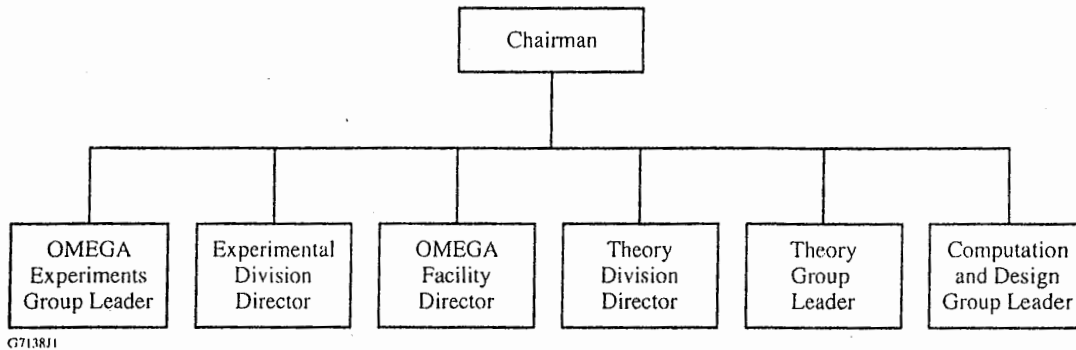


Figure I-2

1003 FASC Roles and Responsibilities

3.1 Responsibilities

The Facility Advisory and Scheduling Committee formulates the annual facility schedule, reviews experimental proposals for compatibility and safety, and evaluates facility availability and experimental effectiveness. The FASC recommends the annual facility schedule and represents the needs of the users to the LLE Director and OMEGA Facility Director.

3.1.1 Annual Scheduling Meeting

The full FASC meets in June of each year to formulate the one-year OMEGA facility schedule for the upcoming fiscal year. Additionally, the FASC reviews facility availability and effectiveness for the previous year and recommends notional shot allocations for the fiscal year after next. Specific responsibilities include:

- Recommend shot allocations for the set of experimental proposals submitted by the OMEGA user groups for the upcoming fiscal year using the following criteria:
 - Consistency of experimental goals and NNSA's programmatic requirements and the likelihood of the experimental goals being achieved.
 - The uniqueness of OMEGA to perform the experiment or a recommendation that the experiment be performed by another facility.
 - The impact of the experiment on the facility, e.g., potential for system damage, environmental issues, etc.

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- Review programmatic requirements for the fiscal year after next and make a recommendation for total system time required and the overall program balance.
- Review user requests for facility modifications and recommend appropriate action to the LLE Director and OMEGA Facility Director.
- Review the OMEGA availability and experimental effectiveness for the past year and recommend appropriate lessons learned to the LLE Director and OMEGA Facility Director.
- Review existing experimental capabilities such as diagnostics and information availability, and recommend improvements where warranted.
- Review policy for experimental data ownership, access, and security issues.

3.1.1.1 Membership The FASC committee members are appointed by the host institution and approved by the LLE Director. The membership is summarized below.

Number of Members	Subcommittee	Source
8	Ignition Physics	LLNL, LANL, LLE (5), SNL
2	Weapons Physics	LLNL, LANL
2	Basic Science	NLUF Manager (1) University Community (1)

The committee membership will serve for a term determined by the host institution. The term should nominally be for at least two years. The committee chairman will be the Deputy Director of LLE or another member appointed by the LLE Director.

The basic science subcommittee consists of the NLUF manager and a representative of the university users' committee appointed by the LLE Director. Basic science consists of the NLUF and Laboratory basic science programs. Laboratory means the National Laboratories (LLNL, LANL, and SNL) and LLE (including the Fusion Science Center represented through LLE). An NLUF Technical Evaluation Panel is appointed separately as defined by the NLUF management program contained in the UR/LLE-DOE Cooperative Agreement. This committee meets biennially to review NLUF proposals and recommends to NNSA the proposals to fund and their shot allocations. The recommendations of this committee are represented by the NLUF Manager at the FASC. While the NLUF programmatic funding is provided separately by NNSA, the programmatic funding for Laboratory basic

science is provided by the individual laboratory and system time is provided by the facility. The Laboratory basic science program will be administered by the NLUF Manager who will issue a yearly solicitation for proposals. The Laboratory Basic Science Review Committee members will be approved by the LLE Director and will consist of members from the user laboratories (one each) as well as at least two independent members. This committee will peer review all proposals on merit and make a recommendation to the LLE Director of proposals in rank order including a recommended system time allocation.

3.1.1.2 Committee Procedures The procedures that govern the annual schedule formulation process and facility review are outlined in this section. This process will be initiated each year by the OMEGA Facility Director issuing relevant guidance and a planning timeline.

- The subcommittees meet in the early spring to review proposals and recommend system time requirements in time to provide an input to the draft annual facility schedule and support the annual FASC meeting held in June of each year.
- The OMEGA Facility Director collects the inputs from the subcommittees, evaluates facility impact, and formulates a draft of the fiscal-year schedule for review at the annual FASC meeting. The subcommittee chairman will present proposals for system time to the FASC, including the results of proposal ranking and recommending experiments that should be scheduled.
- The full committee will meet in closed session to evaluate the input of the subcommittees and recommend a balanced program that meets the guidance provided by NNSA. If there is inadequate system time to fulfill all requests, the committee will recommend the "split" among the three areas and require the subcommittees to reduce the requests to meet the allocation. The full committee will recommend the fiscal-year schedule that includes 5% contingency to the LLE Director for approval.
- The committee will complete the reviews identified in Sec. 3.1.1 and report the results to the LLE Director and OMEGA Facility Director.

3.1.1.3 User Requirements Each laboratory is responsible for formulating an experimental program to fulfill its campaign objectives. Proposals for experiments from selected PI's are formulated to meet these program objectives. Proposals that are not in support of program objectives should not be submitted. Members of participating laboratories cannot be PI's on NLUF proposals. Proposals from outside entities [for example, proposals resulting from international agreements (e.g., CEA, AWE)], will go through the same

process as all other proposals. Proposal content and PI responsibilities are detailed in Sec. 1004.

3.1.2 Fiscal Year After Next First-Quarter Schedule

A provisional first-quarter schedule will be developed in April of each year. The planning for this will be initiated by LLE at least two months in advance, and the scheduling meeting will be via video teleconference. This will allow the identification of target requirements early to ensure that first-quarter experiments can be supported. While this schedule is provisional, it is envisioned that it will be adopted with little or no revision during the normal annual June OMEGA Scheduling and Advisory Committee meeting. The recommended notional system time allocations for the upcoming fiscal year should be used as guidance in arriving at this provisional first-quarter schedule. Section 3.1.1 procedures should be used in developing this schedule.

3.1.3 Biweekly FASC Meetings

A subcommittee of the FASC consisting of the LLE members of the FASC, the Laser Facility Manager, the Experimental Operations Group Leader, and the Laser System Scientist meet biweekly to administer the facility schedule and monitor its effectiveness (other, non-LLE committee members are welcome to attend this meeting if available on site). Specific responsibilities include:

- Review experimental proposals submitted by Principal Investigators two months in advance for system and experimental compatibility and safety. Approve or recommend changes to the proposals.
- Review experimental critiques submitted by Principal Investigators and propose corrective actions to the Facility Director where warranted.
- Evaluate the current and planned activities on the system presented by the Laser Facility Manager.
- Evaluate the experimental diagnostic performance and progress in implementing new/modified diagnostics presented by the Experimental Operations Group Leader.
- Review the status of submitted proposals and critiques.
- Review recommended schedule changes and, in consultation with users, formulate schedule changes to accommodate user requests where possible.
- Assign system contingency time to make up for lost experimental time or to perform new, high-priority experiments.

- Conduct a running review of the system schedule to determine the ability to perform previously approved experiments, especially those dependent on system or diagnostic upgrades.
- Ensure that the facility schedule is kept current and posted on LLE's web site.

1004 Experimental Proposals and Principal Investigator Roles and Responsibilities

With respect to the laser facility, PI's are those individuals responsible for proposing experiments to be conducted on the OMEGA Laser System.

4.1 Principal Investigator Orientation

Principal investigators must complete an OMEGA familiarization before conducting their first experiment. This familiarization should be scheduled through the Laser Facility Manager at least three months prior to the PI's first scheduled experiment. The familiarization will include the following:

- Briefing on OMEGA and/or OMEGA EP capabilities,
- Review of PI responsibilities including SRF preparation,
- Safety briefing,
- Tour of OMEGA/OMEGA EP,
- Observation of operations, preferably with an experimental PI,
- Target metrology and positioning requirements, and
- Briefing on diagnostic qualification procedures.

4.2 Experimental Proposal

Once an experiment is scheduled by the FASC, the PI is responsible for submitting a proposal template and SRF's, coordinating experimental and laser requirements, monitoring the experiment execution, and writing a critique of the execution of the experiment within one week of its performance. Principal investigators are responsible for submitting an electronically transmitted experiment proposal template to the FASC that amplifies and extends the information submitted prior to scheduling the experiment. This template and accompanying SRF's, target request forms (TRF's), and VISRAD files must be received at least two months prior to the conduct of the experiment and will initiate the preparation phase for the experiment.

4.2.1 Proposal Template Instructions

4.2.1.1 Date of experiment, AM or PM, experiment title, principal investigators names, and applicable facility (OMEGA, OMEGA EP, or both)

EXHIBIT 2

- Conduct a running review of the system schedule to determine the ability to perform previously approved experiments, especially those dependent on system or diagnostic upgrades.
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4.2.1 Proposal Template Instructions

4.2.1.1 Date of experiment, AM or PM, experiment title, principal investigators names, and applicable facility (OMEGA, OMEGA EP, or both)

4.2.1.2 Summary of the experiment's objectives

4.2.1.3 Laser and diagnostic requirements for the experiment. The input for this should include experimental configuration name and a draft SRF and a request identification (RID) number for each experimental configuration. Any non-LLE supported diagnostics or unqualified diagnostics should be separately identified.

4.2.1.4 Type and number of targets including number of spares.

- Identify the target request form (TRF) number for each configuration, if available.
- A sample of complex targets (defined as other than a simple flat-foil, spherical direct-drive capsule, or plain hohlraum) must be delivered to LLE at least one week prior to the scheduled experiment. This will allow testing the positioning of the target and developing accurate target-positioning procedures and reticules by placing the target at target chamber center (TCC) when TCC time is available. Indicate on the proposal if targets are complex and include the number of targets ordered for each configuration.
- Targets must be metrologized prior to delivery to LLE and verified after arrival at LLE using LLE's Powel scope. Metrology data will be available to the Experimental Operations Group no later than two full working days prior to the day of shots.

4.2.1.5 A VISRAD file that shows the target including the mount stalks and the beams intercepting the target. (Use of the software program, VISRAD, enhances visualization and importation of data to the SRF.) The file name must be formatted "<RID Number>-<PI Name>.vvw," e.g., for targets corresponding to RID 12345 and PI surname of Heeter, the file name is "12345-Heeter.vvw." VISRAD files must be submitted as attachments to the proposal.

4.2.1.6 Quantity (shot count) of target shots proposed.

4.2.1.7 Identification of diagnostics planned for use on the experiment that are not qualified for use on OMEGA/OMEGA EP. Non-qualified diagnostics are those that have not completed facility qualification per LLE Instruction 7700 and are not generally selectable on the SRF.

4.2.1.8 Laser-energy transport considerations (OMEGA only)

- A. Estimated laser-energy transmission through target:
Significant transmission of laser light through a target can cause damage to the opposed beam optics of the OMEGA compression facility. A beam transmitted through an underdense target can have

significant spatial modulation. The potential for such damage is increased when a distributed phase plate is used in a beam. To assess the potential for such damage, the PI is required to state the estimated level of laser-beam transmission through the target (including blow-through) for the proposed experimental configuration. The basis of this estimate can be a simulation of the laser-target interaction or data from an experiment that closely simulates the proposed experimental configuration. No experiment will be approved unless such an estimate is provided in the template submitted for approval to the OMEGA FASC two months prior to the scheduled shot day. Beam dumps or calorimeters can be installed in opposing beams to increase the maximum acceptable energy transmission (for up to six beams). The following matrix shows the maximum allowable blow-through under various scenarios:

DPP in either target or opposing beam?	Beam block (in opposing beam?)	Maximum acceptable energy transmission
Yes	No	20 J
Yes	Yes	200 J
No	No	100 J
No	Yes	300 J

- B. Estimated laser-energy backscatter from the target
Significant backscatter from a target can cause damage to the beamline optics. To prevent damage, the estimated backscatter energy must not exceed 140 J.
- C. Estimated laser energy reflected from the target
Significant laser energy reflected from a flat target can be directed into other beam ports and damage beamline optics. To reduce the reflected energy and prevent damage, the maximum angle of incidence of a laser beam on a flat target must not exceed 65°.

4.2.1.9 Special shot-schedule considerations associated with experiment

4.2.1.10 Campaign configuration variables. Include all shot parameters such as pulse shapes, beam energies, beam delays, diagnostic setup, etc. that will be varied during the campaign.

4.2.2 The proposal template (see Table I-1) will be reviewed by the FASC to ensure that the experiment's requirements are consistent with the capabilities of the Laser Facility.

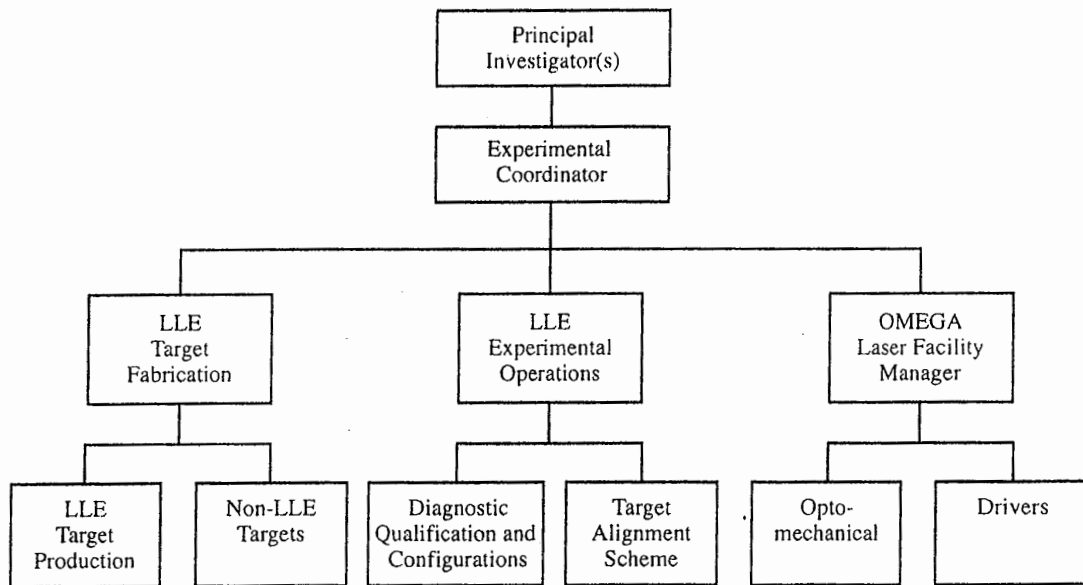
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Experiment Proposal Template (Table I-1)

4.2.1.1 General:		Date of Experiment:		<input type="checkbox"/> AM <input type="checkbox"/> PM	
A. Experiment Title:					
B. Principle Investigators:					
C. Facility:		<input type="checkbox"/> OMEGA		<input type="checkbox"/> OMEGA EP	
4.2.1.2 Summary of Experiment Objectives:					
Experimental Specifications and Laser/Diagnostic Requirements:					
4.2.1.3 SRF		4.2.1.4 Targets			4.2.1.5 VISRAD Filename (RID-PI Name.vrw) (Submit files with proposal)
Experimental Configuration Name	Example RID #	TRF #	Complex Yes No	Quantity	4.2.1.6 # of Target Shots
			<input type="checkbox"/> <input type="checkbox"/>		
			<input type="checkbox"/> <input type="checkbox"/>		
			<input type="checkbox"/> <input type="checkbox"/>		
			<input type="checkbox"/> <input type="checkbox"/>		
			<input type="checkbox"/> <input type="checkbox"/>		
4.2.1.7 Identify all diagnostics required that are not qualified					
Diagnostic Name			Description		
4.2.1.8 Energy Transport Considerations					
A. Estimated laser transmission through target (OMEGA only): _____ J					
B. Estimated backscatter energy is less than 140 J <input type="checkbox"/>					
C. For flat targets, verify maximum angle of incidence is less than 65° <input type="checkbox"/>					
4.2.1.9 Special considerations:					
4.2.1.10 Campaign configuration variables:					

4.3 Principal Investigator Responsibilities

Once the principal investigator's experiment has been scheduled, it will become the PI's responsibility to interface (via the Experimental Division liaison representative for user experiments) with the assigned experimental coordinator, and ultimately with the Laser Facility Manager, the Experimental Operations Group, the Optomechanical System Group, and the LLE Target Fabrication Group (while keeping the experimental coordinator and liaison representative informed) to ensure that the experimental and laser system requirements are coordinated and understood (see Fig. I-3). If a principal investigator uses targets and/or diagnostics not provided by LLE resources, or requires a pulse shape that is not in the LLE inventory, the PI must coordinate those respective requirements through the corresponding LLE groups to ensure that, at the time the experiment is to be conducted, issues associated with availability or compatibility of those non-LLE-provided resources have been resolved.



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Figure I-3

4.3.1 Experiment Reviews

4.3.1.1 Approximately two weeks prior to commencing the experiment, the PI, or designee, will conduct a comprehensive review of the detailed requirements for their upcoming campaign. This review is for the mutual benefit of the laser and experimental operations group leaders and the scientists involved with laser and diagnostic systems. If changes have been

made since the two month submission, the PI shall submit an updated VISRAD model of the targets and revised SRF's that define each unique shot configuration prior to this meeting. (See Sec. 4010 "Shot Request Forms and Administration" for more on the forms.)

4.3.1.2 All new diagnostics must be fully qualified by Wednesday, two weeks before the date of the experiment.

4.1.1.3 Final Shot Request Forms shall be submitted to the Laser Facility Manager by the close of business on the Monday prior to the week of target shots. The Laser Facility Manager shall be notified of subsequent changes prior to the initiation of the shot by the operations crew. Any special requirements for set up of the diagnostics for the first shot should be clearly indicated: for example, modifications to the ten-inch manipulator set-up sheets.

4.3.1.4 By two working days before the shots, the PI will provide target metrology results for all targets to the Experimental Operations Group Leader.

4.3.1.5 For each shot day of the campaign, the PI will support the shift briefings as appropriate. During the actual execution of the experiments, the principal investigator will act as an advisor to the LLE Shot Director and may be called upon to render advice on whether to proceed with planned experiments in the event of abnormal system performance. The Shot Director is in charge of the overall laser and target systems during a shot series. If issues associated with safety (personnel or equipment) arise during an experimental sequence, the Shot Director can abort that shot or even the whole series if warranted.

4.3.2 Experiment Critiques

Once the experiment (or sub-series of the experiment) has been conducted, it is the responsibility of the principal investigator to provide to the FASC [within one week after the experiment (or sub-series) has been conducted] a written critique of the performance of the experiment and facility. The following items should be included:

- Problems encountered
 - Laser
 - Experimental diagnostics
 - Experimental
 - Target
- Suggestions for improvements
- Positive feedback

EXHIBIT 3

Request ID: 123 [Edit this request](#)

Created: 17-Jun-2008 Last Modified on 17-Jun-2008 12:08:14

Title: DTRATIO: 3HE ADDITION**Date:** 08/06/2008 AM/PM**Principal Investigators:** HANS HERRMANN**Facility:** Omega**Summary:**

Previously this campaign has examined the behavior of ignition experiments with He added to a fixed DT pressure. For this series of shots, we will vary the DT ratio as 3He is added to maintain hydro-equivalency (i.e., remove 3 D-atoms for every 2 3He-atoms added). Experiments will use three different partial pressures of a He3. In this day we will use the 600 ps square pulse to perform the experiment. The purpose of all experiments is to validate the predictive capability of simulation codes.

Experiment Specifications and Laser/Diagnostic Requirements:

Experimental Configuration Name	Example SRF RID	TRF Order #	Complex Target	Quantity Ordered	VISRAD File	# Target Shots
glass microballoon, DT @ TCC	25865	TRF IDC LANL 08-4 DTRat-08A Rev 02	No	21	View the file.	12

Energy Transport Considerations:	
Estimated laser transmission through target (OMEGA only):	0
Is the estimated backscatter energy less than 140 J?	Yes
For flat targets: Is the max. angle of incidence less than 65 Deg?	No

Special Considerations:

None

Configuration Variables:

We will be adjusting partial pressure of helium gas.

EXHIBIT 4

**Scheduling Committee Meeting
Thursday 19 June 2008 at 1600
Meeting Minutes**

The meeting was called to order at 1600 by Steve Loucks. Attendees: Steve Loucks, Greg Pien, Craig Sangster, John Soures, Steve Stagnitto, Drew Maywar, Sam Morse, Keith Thorp, Leon Waxer, and David Canning.

I. Schedule Changes - Final Revision 18, 19 June 2008

OMEGA schedule adopts LLNL schedule change proposal #19 and updates the 4th qtr OMEGA EP schedule

II. Experimental Proposals:

- Proton BL, C. Li
9 July 2008
The OMEGA Scheduling Committee reviewed and approved your proposed template for the Proton BL experiments scheduled to be conducted on OMEGA on 9 July, 2008. The Committee notes the following item to your attention:
1. Please provide specification for the laser pulse shape
- Adv. Ignition, C. Stoeckl
22 & 23 July 2008
The OMEGA Scheduling Committee reviewed and approved your proposed template for the Advanced Ignition experiments scheduled to be conducted on OMEGA and OMEGA EP on 22-23 July, 2008. The Committee notes the following issues to your attention:
1. The LAS3818 pulse is not designed to operate at 370 J.
2. The OMEGA EP beam at 10 ps has a maximum current energy limit of 400 J
3. Please clarify target characteristics
4. Please specify cone destroyer beams to assure minimum possible residual target mass fragments.
5. Please check possible questions regarding the readiness status of UFXRSC for OMEGA with G. Pien.
- Inner SRS, D. Froula
24 & 25 July 2008
The OMEGA Scheduling Committee reviewed and approved your revised template for the Inner SRS experiments scheduled to be conducted on OMEGA on 24-25 July, 2008
- HDI, A. Casner
29 July 2008
The OMEGA Scheduling Committee reviewed and approved your proposed template for the HDI experiments scheduled to be conducted on OMEGA on 29 July, 2008. The Committee notes the following item to your attention:
1. The apparent point backlighting configuration must be approved by James Knauer
- LEH Liner, S. Regan
30 July 2008
The OMEGA Scheduling Committee reviewed and approved your proposed template for the LEH Liner experiment originally scheduled to be conducted on OMEGA on 7/31/08. The Committee notes the following items:
1. To optimize the week's work flow, the Committee recommends re-scheduling this experiment for 7/30/08.
2. Please submit a new pulse shape request.

- ID Fast Ignition, N. Izumi
31 July 2008
The OMEGA Scheduling Committee reviewed and conditionally approved your proposed template for the ID fast ignition experiments scheduled to be conducted on OMEGA on 30 July, 2008. The Committee notes the following issues concerning your proposal:
1. Please provide VISRAD or equivalent files of your configuration.
2. Please provide SRF for calibration shot
3. Please clarify the need for the P12/P1 axis for this experiment. The week was originally scheduled to use the P6/P7 axis. If there is no alternative for this experiment, the Committee would consider rescheduling from 30 July to 31 July.
- Cryo, C. Sangster
05 & 12 August 2008
The OMEGA Scheduling Committee reviewed and approved your proposed template for the ISE Cryo experiments scheduled to be conducted on OMEGA on 5 and 12 August, 2008.
- DTRAT, H. Herrmann
06 August 2008
The OMEGA Scheduling Committee reviewed and approved your proposed template for the DTRAT experiments scheduled to be conducted on OMEGA on 6 August, 2008.
- ISE Eos, J. Eggert
14 August 2008
The OMEGA Scheduling Committee reviewed and conditionally approved your proposed template for the ICE EOS experiments scheduled to be conducted on OMEGA on 14 August, 2008. The Committee noted the following remaining requirement for your proposal:
1. Please submit a readable file showing your experimental configuration. This would ideally be a VISAR file, but may also be a pdf file exported from the software you use to carry out your experimental design.
- ICE Hohlräum, H. Park
14 August 2008
The OMEGA Scheduling Committee reviewed and conditionally approved your proposed template for the ICE Hohlräum experiments scheduled to be conducted on OMEGA on 14 August, 2008. The Committee noted the following remaining requirement for your proposal:
1. Please submit a readable file showing your experimental configuration. This would ideally be a VISAR file, but may also be a pdf file exported from the software you use to carry out your experimental design.

III. Experimental Critiques

- SNRT, Drake
1 May 2008
- ICE Hohl 08B, Park
7 May 2008
- FSC MIT, Li
14 May 2008
- Dia Dev, Glebov
21 & 22 May, 2008

- Shock Timing, Boehly
23 & 28 May 2008

IV. Diagnostics

Greg Pien gave an update.

V. OMEGA

Keith Thorp gave an Omega update.

The meeting was adjourned at 1745.

The next meeting will be held on Thursday 03 July 2008 at 1500 in the Coliseum.